



SFUND RECORDS CTR  
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MEMORANDUM

TO: Chris Lichens, Remedial Project Manager *CL*  
Site Cleanup Section 4, SFD-7-4

THROUGH: Rose Fong, ESAT Task Order Manager (TOM)  
Quality Assurance (QA) Program, MTS-3

FROM: Doug Lindelof, Data Review Task Manager *DL*  
Region 9 Environmental Services Assistance Team (ESAT)

ESAT Contract No.: EP-W-06-041  
Technical Direction Form No.: 00105083 Amendment 1

DATE: October 2, 2007

SUBJECT: Review of Analytical Data, Tier 2

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

Site:	Omega Chem OU2
Site Account No.:	09 BC LA02
CERCLIS ID No.:	CAD042245001
Case No.:	None
SDG Nos.:	IQG0607, IQG1031, IQG1213, IQG1460, and IQG1853
Laboratory:	TestAmerica Analytical Testing Corp.
Analysis:	Hexavalent Chromium
Samples:	26 Groundwater Samples (see Case Summary)
Collection Dates:	July 9, 12, 13, 17, and 19, 2007
Reviewer:	Stan Kott, ESAT/Laboratory Data Consultants

This report has been reviewed by the EPA TOM for the ESAT contract, whose signature appears above.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment

SAMPLING ISSUES: ☒ Yes ☐ No

00105083-8395/Omega/ACE(83)/IQG0607\_IQG1853\_T2RPT

## Data Validation Report

Case No.: None  
SDG Nos.: IQG0607, IQG1031, IQG1213, IQG1460, and IQG1853  
Site: Omega Chem OU2  
Laboratory: TestAmerica Analytical Testing Corp.  
Reviewer: Stan Kott, ESAT/LDC  
Date: October 2, 2007

### I. CASE SUMMARY

#### Sample Information

SDG IQG0607 Samples: OC2-MW24D-W-0-577, OC2-MW24C-W-0-578,  
OC2-MW24B-W-0-579, OC2-MW24A-W-0-580, and  
OC2-MW24A-W-1-581

SDG IQG1031 Samples: OC2-MW27D-W-0-590, OC2-MW27C-W-0-591,  
OC2-MW27B-W-0-592, OC2-MW24B-W-1-593, and  
OC2-MW27A-W-0-594

SDG IQG1213 Samples: OC2-MW23A-W-0-595, OC2-MW23D-W-0-596,  
OC2-MW23C-W-0-597, OC2-MW23B-W-0-598, and  
OC2-MW29-W-0-599

SDG IQG1460 Samples: OC2-MW8D-W-0-603, OC2-MW8C-W-0-604,  
OC2-MW8B-W-0-605, OC2-MW8A-W-0-606,  
OC2-MW12-W-0-607, and OC2-MW12-W-1-608

SDG IQG1853 Samples: OC2-MW20C-W-0-614, OC2-MW20B-W-0-615,  
OC2-MW20A-W-0-616, OC2-MW14-W-0-617,  
and OC2-MW3-W-0-618

Concentration and Matrix: Low Concentration Groundwater  
Analysis: Hexavalent Chromium  
SOW: EPA Method 218.6  
Collection Date: July 9, 12, 13, 17, and 19, 2007  
Sample Receipt Date: July 9, 12, 13, 17, and 19, 2007  
Preparation Date: July 9, 13, 13, 17, and 19, 2007  
Analysis Date: July 9, 13, 13, 17, and 19, 2007

#### Field QC

Field Blanks (FB): Not Provided  
Equipment Blanks (EB): Not Provided  
Background Samples (BG): Not Provided  
Field Duplicates (D1): OC2-MW24A-W-0-580 and OC2-MW24A-W-1-581  
Field Duplicates (D2): OC2-MW27B-W-0-592 and OC2-MW27B-W-1-593  
Field Duplicates (D3): OC2-MW12-W-0-607 and OC2-MW12-W-1-608

#### Laboratory QC

Method Blanks and  
Associated Samples: 7G09092-BLK1 for SDG IQG0607, 7G13055-BLK1  
for SDG IQG1031, 7G13133-BLK1 for SDG IQG1213,  
7G17075-BLK1 for SDG IQG1460, and 7G19121-  
BLK1 for SDG1853

Matrix Spike (MS): IQG0597-01MS1, OC2-MW27C-W-0-591MS1, OC2-MW29-W-0-599MS1, IQG1425-03MS1, and OC2-MW20C-W-0-614MS1

Matrix Spike Duplicate (MSD): IQG0597-01MSD1, OC2-MW27C-W-0-591MSD1, OC2-MW29-W-0-599MSD1, IQG1425-03MSD1, and OC2-MW20C-W-0-614MSD1

Analysis: Hexavalent Chromium

<u>Analyte</u>	<u>Sample Preparation Date</u>	<u>Analysis Date</u>
Hexavalent Chromium	July 9, 13, 17, and 19, 2007	July 9, 13, 17, and 19, 2007

### Sampling Issues

The Chain of Custody (COC) record form did not specify a sample to be used for laboratory quality control (QC). As a result, the laboratory selected the QC samples. For SDG IQG0607 and SDG IQG1460, the laboratory selected samples IQG0597-01 and IQG1425-03, respectively, which may not be representative of the respective environmental sample matrices. The effect on data quality is not known.

The cooler containing all samples for SDG IQG1031 arrived at the laboratory with a temperature of 13°C. This temperature exceeds the 4°C temperature specified in Method 218.6. The results are estimated (J) due to inadequate preservation. See Validity and Comments section Comment B.

The exact type of sample preservation was not provided on the COC record form. However, the laboratory Case Narrative indicates no problems were encountered. No adverse effect on data quality is expected.

### Additional Comments

**As directed by the TOM, a Tier 2 validation (i.e., review all QC results and calibrations, minus calculation check) was performed.**

The laboratory reports results less than the reporting limit (RL) as "ND". However, ND is reported in the attached table as 0.0003U. No adverse effect on data quality is expected.

Hexavalent chromium sample OC2-MW8A-W-0-606 (SDG IQG1460) exceeded the instrument calibration curve and was analyzed at a 10-fold dilution. No adverse effect on data quality is expected.

Analytical results are listed in Table 1A with qualifications. Definitions of data qualifiers used in Table 1A are listed in Table 1B.

This report was prepared in accordance with the following documents:

- Region 9 Standard Operating Procedure 906, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Inorganic Data Packages*; and
- *USEPA Method 218.6, Determination of Dissolved Hexavalent Chromium in*

## II. VALIDATION SUMMARY

The data were evaluated based on the following parameters:

	<u>Parameter</u>	<u>Acceptable</u>	<u>Comment</u>
1.	Data Completeness	Yes	
2.	Sample Preservation and Holding Times	No	A,B
3.	Calibration	Yes	
	a. Initial		
	b. Initial and Continuing Calibration Verification		
4.	Blanks	Yes	
5.	Laboratory Control Sample (LCS)	Yes	
6.	Duplicate Sample Analysis	Yes	
7.	Matrix Spike Sample Analysis	Yes	
8.	Field Duplicate Sample Analysis	No	C
9.	Sample Quantitation	Yes	
10.	Overall Assessment	Yes	

N/A = Not Applicable

## III. VALIDITY AND COMMENTS

- A. The following result is estimated and should be flagged "J" because the technical holding time was exceeded.

- Hexavalent chromium in sample OC2-MW27D-W-0-590 (SDG IQG1031)

The method 24 hour technical holding time for water was exceeded as shown below.

Sample Number	Date Collected	Time Collected	Date Analyzed	Time Analyzed	Exceeded (HH:MM)
OC2-MW27D-W-0-590	7/12/07	08:10 AM	7/13/07	10:47 AM	2:37

The nondetected result for sample OC2-MW27D-W-0-590 may be biased low and a false negative may exist.

- B. The following results are estimated and flagged "J" in Table 1A due to inadequate sample preservation.

- Hexavalent chromium in all SDG IQG1031 samples

These samples did not meet Method 218.6 sample preservation criterion. The samples were not adequately preserved in the field to a temperature of 4°C as shown below.

Sample Number	Temperature
OC2-MW27D-W-0-590	13°C
OC2-MW27C-W-0-591	13°C
OC2-MW27B-W-0-592	13°C
OC2-MW27B-W-1-593	13°C
OC2-MW27A-W-0-594	13°C

The nondetected sample results for samples listed above may be biased low and false negatives may exist

- C. An absolute difference of 0.00071 mg/L was obtained for hexavalent chromium in the analysis of field duplicate pair samples OC2-MW12-W-0-607 and OC2-MW12-W-1-608 (SDG IQG1460). Since sampling variability is included in the measurement, field duplicate results are expected to vary more than laboratory duplicates which have a  $\pm 0.0003$  mg/L absolute difference criterion for precision. The effect on data quality is not known.

*The analysis of field duplicate samples is a measure of both field and analytical precision. The imprecision in the results of the analysis of the field duplicate pair may be due to the sample matrix, poor sampling, or laboratory technique.*

**ANALYTICAL RESULTS**  
**Table 1A**

Page 1 of 1

Case No. : None  
Site : Omega Chemical OU2  
Lab : TestAmerica Analytical Testing Corp.  
Reviewer : Stan Kott, ESAT/LDC  
Date : October 2, 2007

SDG No. : IQG0607

Concentration in mg/L

Analysis Type : Hexavalent Chromium In Groundwater  
Samples By EPA Method 218.6

Sample ID :	OC2-MW24D-W-0-577	OC2-MW24C-W-0-578	OC2-MW24B-W-0-579	OC2-MW24A-W-0-580	OC2-MW24A-W-1-581	Reporting Limit
Collection Date :	07/09/2007	07/09/2007	07/09/2007	07/09/2007 D1	07/09/2007 D1	
PARAMETER	Result	Val	Com	Result	Val	Com
HEXAVALENT CHROMIUM	0.0003U			0.0018		

Case No. : None  
Site : Omega Chemical OU2  
Lab : TestAmerica Analytical Testing Corp.

SDG No. : IQG1031

Concentration in mg/L

Analysis Type : Hexavalent Chromium In Groundwater  
Samples By EPA Method 218.6

Sample ID :	OC2-MW27D-W-0-590	OC2-MW27C-W-0-591	OC2-MW27B-W-0-592	OC2-MW27B-W-1-593	OC2-MW27A-W-0-594	Reporting Limit
Collection Date :	07/12/2007	07/12/2007	07/12/2007 D2	07/12/2007 D2	07/12/2007	
PARAMETER	Result	Val	Com	Result	Val	Com
HEXAVALENT CHROMIUM	0.0003U	J	AB	0.0003U	J	B

Case No. : None  
Site : Omega Chemical OU2  
Lab : TestAmerica Analytical Testing Corp.

SDG No. : IQG1213

Concentration in mg/L

Analysis Type : Hexavalent Chromium In Groundwater  
Samples By EPA Method 218.6

Sample ID :	OC2-MW23A-W-0-595	OC2-MW23D-W-0-596	OC2-MW23C-W-0-597	OC2-MW23B-W-0-598	OC2-MW29-W-0-599	Reporting Limit
Collection Date :	07/13/2007	07/13/2007	07/13/2007	07/13/2007	07/13/2007	
PARAMETER	Result	Val	Com	Result	Val	Com
HEXAVALENT CHROMIUM	0.024			0.0050		

Case No. : None  
Site : Omega Chemical OU2  
Lab : TestAmerica Analytical Testing Corp.

SDG No. : IQG1460

Concentration in mg/L

Analysis Type : Hexavalent Chromium In Groundwater  
Samples By EPA Method 218.6

Sample ID :	OC2-MW8D-W-0-603	OC2-MW8C-W-0-604	OC2-MW8B-W-0-605	OC2-MW8A-W-0-606	OC2-MW12-W-0-607	OC2-MW12-W-1-608
Collection Date :	07/17/2007	07/17/2007	07/17/2007	07/17/2007	07/17/2007 D3	07/17/2007 D3
PARAMETER	Result	Val	Com	Result	Val	Com
HEXAVALENT CHROMIUM	0.0020			0.0056		

Case No. : None  
Site : Omega Chemical OU2  
Lab : TestAmerica Analytical Testing Corp.

SDG No. : IQG1853

Concentration in mg/L

Analysis Type : Hexavalent Chromium In Groundwater  
Samples By EPA Method 218.6

Sample ID :	OC2-MW20C-W-0-614	OC2-MW20B-W-0-615	OC2-MW20A-W-0-616	OC2-MW14-W-0-617	OC2-MW3-W-0-618	Reporting Limit
Collection Date :	07/19/2007	07/19/2007	07/19/2007	07/19/2007	07/19/2007	
PARAMETER	Result	Val	Com	Result	Val	Com
HEXAVALENT CHROMIUM	0.0003U			0.014		

Val - Validity. Refer to Data Qualifiers in Table 1B.

Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.

ND - Not Detected, NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs

FB - Field Blank, EB - Equipment Blank, TB - Trip Blank, BG - Background Sample

## TABLE 1B

### DATA QUALIFIER DEFINITIONS FOR INORGANIC DATA REVIEW

The definitions of the following qualifiers are prepared in accordance with the document *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, October 2004.

- U     The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- J     The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- J+    The result is an estimated quantity, but the result may be biased high.
- J-    The result is an estimated quantity, but the result may be biased low.
- R     The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.
- UJ    The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.